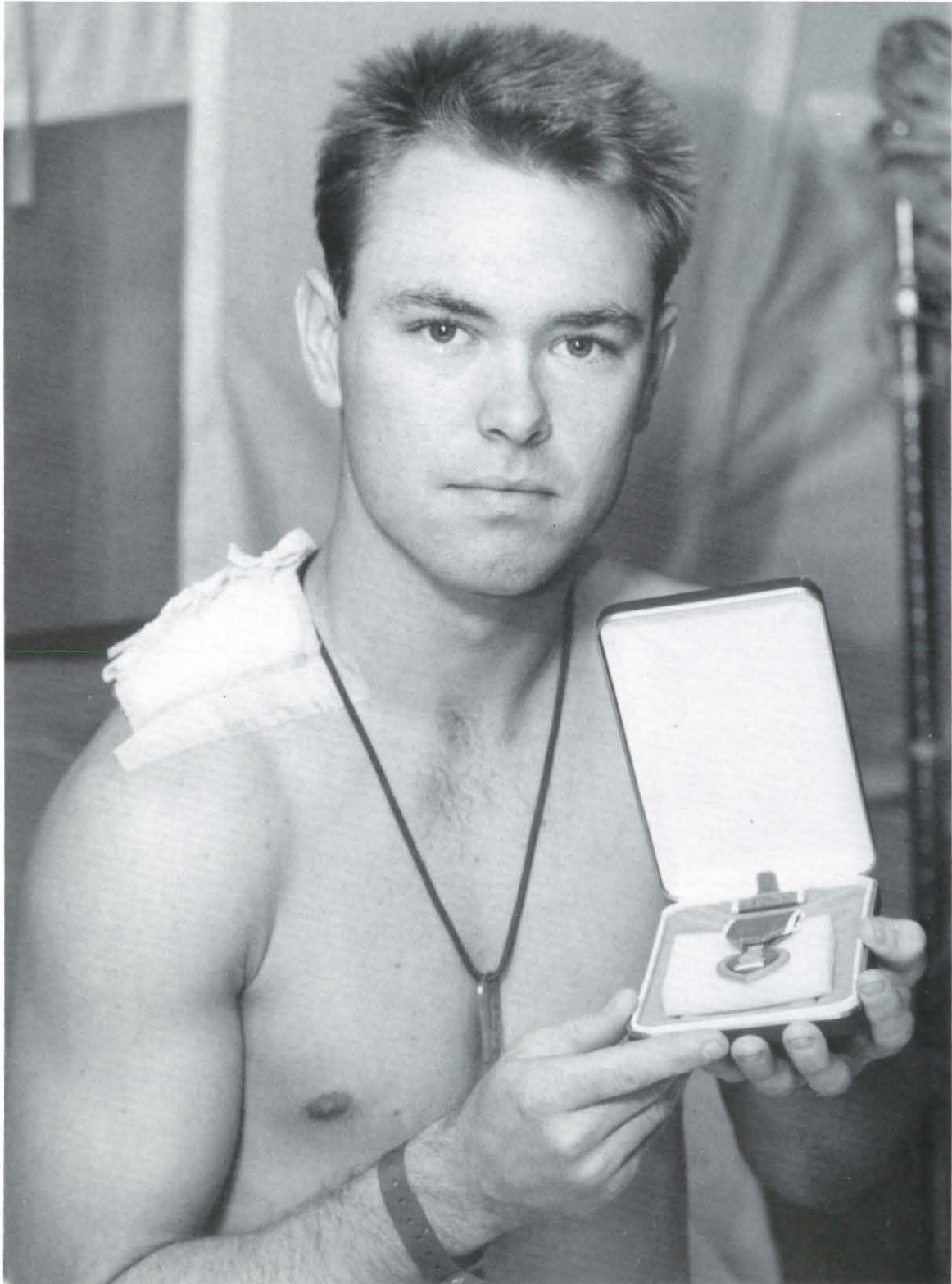


NAVY MEDICINE

January-February 1991



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COVER: HM3 Clarence Conner displays the first Purple Heart awarded during Operation Desert Storm. Conner was injured by shrapnel during an artillery duel between his Marine unit and Iraqi forces across the border on the first day of fighting. Story on page 11. Photo by Peter Dejong, DOD Pool, AP/Wide World Photos.

Gulf Sitrep

Two issues ago I talked about Navy medicine's rapid and capable response to Operation Desert Shield's contingency requirements. Now, nearly 6 months later, we are still major providers of health care support in theater while we continue to maintain our ability to care for beneficiaries in our CONUS facilities. I am as proud as ever of our total team efforts.

It is teamwork that makes it possible for our stateside personnel to maintain the patient load asked of them, and it is teamwork that helps our deployed shipmates cope with the tension of waiting. I visited our deployed forces in Saudi Arabia and Bahrain during the holidays, and I was deeply touched by the dedication, spirit, and resourcefulness of the people we have sent over there to perform a difficult but vital mission.

We must continue to provide support, which is essential to maintain the high morale I saw throughout the theater. Our people on the line know their country and their shipmates support them—a constant flow of letters, magazines, books, and gifts testifies to that support. A ton of mail arrives daily for both hospital ships, bringing specialized cheer to those aboard. A news article about our doctors at Fleet Hospital 5 doing needlepoint to help maintain their surgical skills resulted in several area craft stores sending care packages of needlepoint supplies.

Deteriorating skills is a concern for our Desert Shield medical folk, but they are not sitting idle. Through their resourcefulness and the support of their shipmates at home, this is productive time as well. In addition to providing routine health care support to forces in theater, they also hold mass casualty drills, training in advanced trauma life support and cardiac trauma life support.

This massive deployment is very expensive and stressful, but it has allowed us to test our theories and plans which had before been only paper drills. We are constantly learning lessons and applying our new knowledge to increasing our capabilities. We are still ironing out some problems with pay and ensuring sea duty credit is given where appropriate, and our medical logistics people have been working hard both in theater and at home to smooth out the rough edges of the supply lines.

Although we certainly appreciate the opportunities to fine tune our contingency plans this situation has provided, we all fervently hope that a peaceful resolution is at hand and that our forces will be home soon. CHARLIE GOLF ONE.

VADM James A. Zimble, MC

"The Shining Star"

VADM James A. Zimble, Surgeon General of the Navy, commended all medical personnel and called Navy medicine "the shining star" of the American military medical support of Operation Desert Shield during an interview at Fleet Hospital 5.

The head of the Bureau of Medicine and Surgery (BUMED) toured the Navy's first activated fleet hospital with RADM Richard I. Ridenour, Marine Corps Surgeon, during a 6-day tour of Navy and Marine Corps medical facilities and amphibious ships in the Mid-East beginning 12 Dec 1990.

Zimble addressed Fleet Hospital 5 staff members during an Admiral's Call, visited patients, and ate breakfast with enlisted personnel during his 15-hour stay at the Navy's largest fully staffed, 500-bed hospital.

The mission of Fleet Hospital 5, which currently provides tertiary medical care to multinational forces operating in Operation Desert Shield, is to treat allied casualties in armed conflict. It aims to facilitate service members' return-to-duty and reduce the need to medically evacuate (medevac) less seriously injured troops who would be able to return to their units after treatment.

Staffed by more than 900 Navy medical and support personnel, 85 percent from Naval Hospital, Portsmouth, VA, Fleet Hospital 5 was constructed from tents and equipment that were stored in 406 International Standards (ISO) containers/shelters on board a pre-positioned ship. The hospital was set up in only 16 days and became fully operational on 11 Sept 1990.

"This hospital is a superb demonstration of what Navy medicine can do," Zimble said. "We have great skill (and) great talent from one of our finest teaching hospitals (Naval Hospital, Portsmouth, VA) that's out here now."

CAPT Richard Mayo, MC, commanding officer of Fleet Hospital 5, and his staff members will provide invaluable expertise to active duty and reserve medical and support personnel when they set up the two additional fleet hospitals the Navy plans to activate for duty in the theater.

"We have those other two fleet hospitals that are already fully assembled in the ISO containers and shelters, so we can't immediately make those kinds of fixes, but when we get them here, when we open them up, we'll already know certain things are going

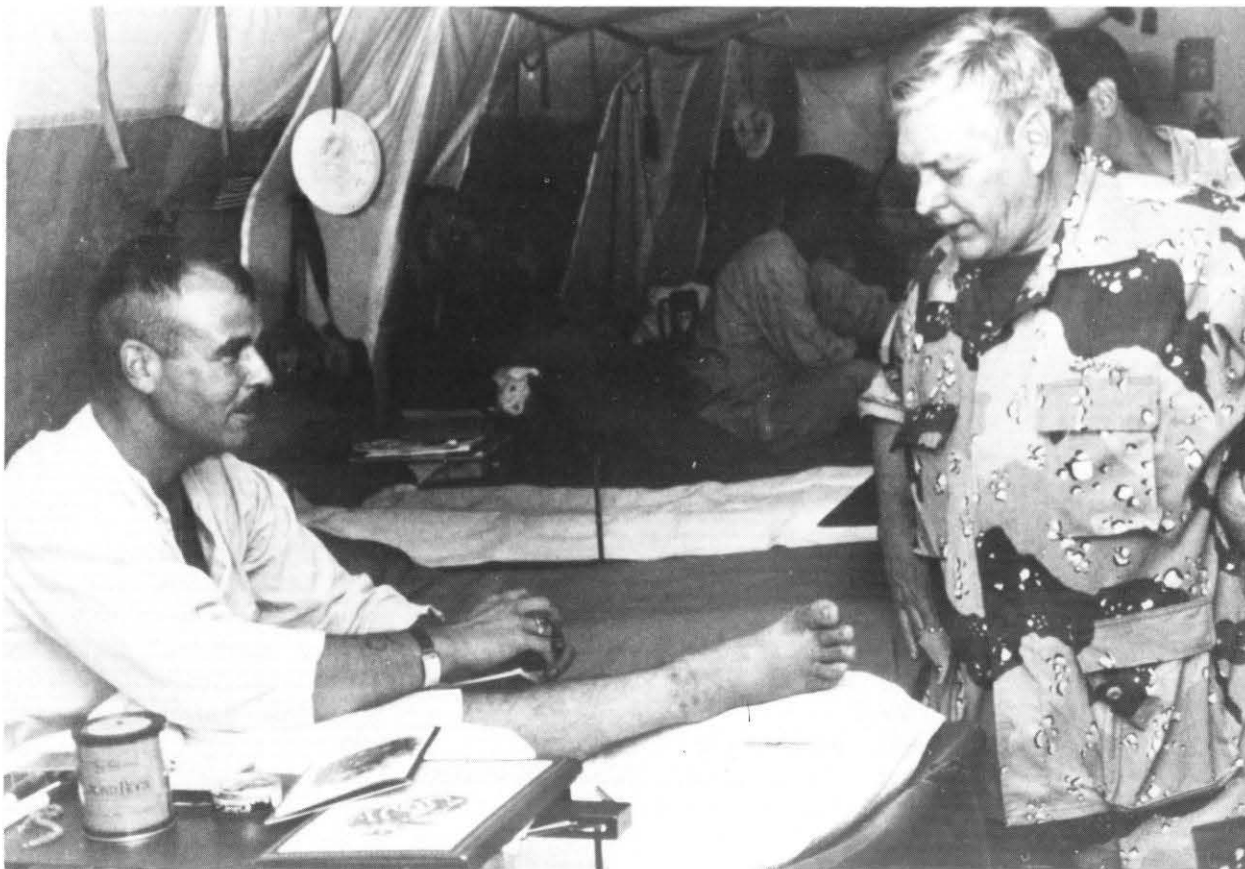
to be in a position where they'll have to be fixed," the admiral said.

"There will be fewer surprises with these next two fleet hospitals. We'll make sure that CAPT Mayo can demonstrate the problems he's had and other people can learn from his experience rather than making their own mistakes. We'll continue to get better."

Navy medicine's readiness to provide medical support for deployed sailors and marines began in 1979 when BUMED initiated plans to expand its capabilities during conflict.

"The state of readiness started about 10 years ago. We had no fleet hospitals. The one (we did have) was rotting away in Da Nang. We had no hospital ships. And a lot of folks in the Navy and the Marine Corps pushed very hard to start the process that would give us modular, deployable hospital systems and two magnificent hospital ships," Zimble continued.

Navy medicine's ability to meet fleet and Marine medical needs anywhere in the world reflects the character of Navy medical and support personnel. "The flexibility is built into the people. They've got skills. They've got competence. They've got innovation. They know (how to do) what they do with what they have. And they're compe-



VADM Zimble talks with a patient during a visit to Fleet Hospital 5.

tent all-around medical providers," Zimble added.

Navy medicine's chief saw this competence at Fleet Hospital 5 firsthand. "I walked around the wards. I saw a variety of medical and surgical conditions. I saw patients who are being well cared for by people who know what they're doing. I saw a level of sophistication in this hospital that's never before, ever, been transported 12,000 miles into theater. I can assure the sailors and marines that we will serve them, and they will get the very best in competent and health care."

The entire Navy medical community has displayed outstanding support for President Bush's decision to send military troops to defend Saudi Arabia. Personnel at Fleet Hospital 5 reflected this support during the admiral's address to them the night of his visit.

While the Admiral's Call covered a wide range of subjects, much discussion revolved around the decision to implement "stop loss" for all Navy medical personnel. "Stop loss" authority prevents critically needed medical and support personnel whose retirement or end of obligated active service (EADS) dates between 1 Jan-30 Sept 1991, from leaving active duty.

The decision affects enlisted hospital corpsmen and dental technicians; Medical and Nurse Corps officers; and Dental Corps, Medical Service Corps, and Chief Warrant Officers with certain specialties. Zimble said Navy medical personnel at Fleet Hospital 5 understand their mission and he admired the way they handled the "stop loss" decision.

"It's a measure of the people who are out here who understand what this is all about and can recognize the truth

and live with it. They want to hear better things but they don't want to hear fantasy," Zimble said. "It's easy to tell people that because all you have to do is remember to tell them the truth. We've got an entire microcosm of Navy out here with one dedicated mission and they understand why they're here."

And all of Navy medicine has met its calling. "I'm not going to single out any one facility. I'm here and they're doing a superb job here, but Navy medicine is 'the shining star,'" he continued. "We've taken a lot of people; we've uprooted them, and we've put them out into very important and significant positions." □

—Story by JO2 Michael Dean, Fleet Hospital 5, Saudi Arabia.

The Teeth in Operation Desert Shield

In the ancient geological past, lush vegetation and abundant animal life once flourished here. Thousands of years since their demise, the organic remains have decomposed into the legacy of "black gold." The wealth that evolved lies beneath this hot, barren wasteland, promising vast riches and power to those who rule its surface. A man named Saddam realized this, and with an awesome display of military assets, overran Kuwait. The United States responded with an incredible force of military hardware and personnel—we are here to support them.

"Sir, you have no other choice than to send me." With these words I committed myself to a "project" that I have trained 18 years in the Navy Dental Corps to fulfill. The rapid assimilation of over 60 personnel from four commands into a strong, viable organization has been accomplished quickly and painlessly. We have a wealth of talent in the corps, officer and enlisted. This is an easy group to manage. Define the goals and standback—this outstanding collection of individuals will come up with ideas, formulate plans, and effectively bring them to fruition.

This article is a collection of thoughts and words of CAPT's Tom Carlson and Greg Kvaska, CDRs Bernie Carter and Rick Hahn, and LCDR Bob Devin—an example of our *team concept*. I'm extremely proud of all our guys and what we have

accomplished in such a short time. Despite long hours, *no time off*, and an ever-present threat, our morale remains high. Be proud of us. Pray for us. We are serving you well.

First Wave

It began with phone calls in early August—"Pack your bags"—and from that moment on our lives have been forever changed. Weddings put on hold, newlyweds separated, vacation plans dropped. All thoughts and efforts turned toward getting our lives as organized as possible prior to deploying for . . . *who knows how long?*

Immediately we developed a checklist: 782 gear? Desert cammie uniforms? NBC MOPP suits and masks? Wills, Power of Attorneys, and SGLI forms current? Shots? Pay on direct deposit? Sandwiched between all this was an amazing amount of training. We taught ourselves NBC, ATLS, weapons familiarization, and even Saudi Arabia culture and custom . . . all accomplished with the uncertainties of when are we going? Where? How? And most of all what will it be like? Within 5 days of the unit's formation, we were on our way.

Our flights to the kingdom were varied as the five different groups flew on everything from C-141s to C-5s, to a DC-10. One group flew first class on a 747. Imagine our chagrin when hearing the flight attendant's usual announcement with a slight twist:

"Place all carry-on bags in the overhead compartment and stow all weapons under the seat with the barrel pointed outward." Thirty hours later—Saudi Arabia. The bus ride to Warehouse Three was uneventful, with only a slight delay by big ugly camels "grazing" on the highway. After a few choice American "phrases" by our marines and some more direct efforts by our driver, they let us pass.

Second Wave

Friday morning, early August: The 21st Dental Company goes out for the weekly 3 mile formation run. It is another cool, beautiful day in paradise at Kaneohe Bay, Hawaii. On returning the company stands at ease in ranks while our "Skipper" CAPT Greg Kvaska makes several brief announcements. Pausing, he adds, "Kuwait has just been overrun by Iraq. We are a Marine unit; we will be called to standby, and we will be ready just in case." No one dreams anything will happen.

One week later: From the Big Island's Pohakuloa Training Area, Marine units have begun flying back to Kaneohe Bay. By afternoon, the Dental Company Detachment had returned. At 1600, the Brigade Surgeon calls together all Kaneohe Bay medical and dental officers. Forty officers stand by and the Brigade Surgeon walks in, thanks us for coming, and without hesitation announces: "In 2 weeks every man in the room will be in Saudi Arabia."



What? We are stunned and momentarily speechless. Then the questions—how, where, when? What happens next? At home families ask, "Why must you go?," knowing all along the reasons.

Saturday, the 21st Dental Company field officers meet. The ground work is laid, the preparation begins. Predeployment endeavors, assignments, and areas of responsibility are tasked. It will be a busy time.

In 10 days, warrior and NBC skills are sharpened. Field medicine, triage, and CPR/ATLS training are reviewed. Afternoon heat acclimatization is begun. Dressed to look like the "Michelin Man" in green, the company goes out for 1-3-mile humps in gas mask and MOPP suits—full NBC protective clothing. For those in need of a little weight loss, this was great—the inside of the suit quickly reaches the temperature of any good sauna.

Then the wait—over 11 days; more training. Three airlift opportunities would elude us. Each occasion wore families thin as each man would make the required phone master every 4 hours. Phone rings. Would it be this time? After three times saying goodbye to loved ones there are no tears left.

Finally, in a brief moment, we are gone. A 0345 muster preceded a 27-hour trip. Buses came, a ride through the night, and at 0300 the second wave arrived at Warehouse Three.

Warehouse Three

There are moments and places in everyone's life which will remain forever etched in their minds. For us, it is Warehouse Three. "Home" was shared with thousands of marines on concrete, no cots, inches apart. One hundred twenty-five degrees + 80 percent humidity + metal warehouse + bodyheat = MAX sweat. And always the nagging fear that today we would have to use one of the few, frequently overflowing portable toilets. An unwritten rule: get upwind quickly when the "Honey Suckers" finally started to empty the toilets. We have strange bedfellows—our gas masks and weapons ready to be loaded. We sleep with them, go everywhere with them. During our assembly line shower we really do feel naked without them.

Our front row seats for the 24-hour "MPS Offload Show" is something we'll all remember. We wish Saddam could see this, maybe he can. It doesn't matter, for our confidence soars in this

frightening environment at the awesome display of our sophisticated weapons. We can't lose . . .

Amid this chaotic, sweltering environment dental again shines. We build our organization atop our sleeping pads in Warehouse Three—the site of the first Navy Dental Clinic in Saudi Arabia. Our 10 clinics are now everywhere—north and south—from warehouses to locker rooms, to vacated kitchens to tents. We have provided a much-needed service, under adverse conditions, with hundreds of emergencies and over a thousand patients treated. Our daily routine differs slightly from that back home—our morning quarters start with a gas mask drill and end with a FOD walkdown to minimize rat attacks. How many dental supply lists include sandbags, which are then delivered by our friendly supply tech in fragmentation jacket, pistol, and gas mask?

We are doing well. The four dental companies have surrendered identities to form an outstanding detachment characterized by high morale, innovative solutions, and a great sense of humor. One member's humor was tested to the limit when he enjoyed an exciting ride in a portable toilet an unknowing marine moved with a forklift. When "hot meals" means MREs heated on asphalt and the only MRE left is the infamous pork patty, one must see "humor" in everything.

So as days roll on, we are better prepared, better trained, and more capable. We dream of swimming pools, ice cream, beer, and pizza. Most of all, we dream of loved ones and home. We remain steadfast in our resolve to provide care wherever and whenever our marines and sailors need us. We are proud to be serving our country and proud to represent the U.S. Navy Dental Corps. □

—Submitted by CAPT Tom Carlson, DC, CO FMF Dental Detachment, Saudi Arabia.

A Fitting Tribute

Wasp Medical Department Dedication

At 1445 on 15 Sept 1942, the Japanese submarine I-19 fired four torpedoes at USS *Wasp* (CV-7). Two smashed home, followed by a third, while the fourth passed ahead. The first two hits were in the vicinity of magazines and aviation gasoline tanks causing secondary explosions and fires throughout the ship.

While damage control parties fought to save the ship, *Wasp's* medical department was waging a different kind of battle. Wounded himself, then LCDR Bartholomew W. Hogan, MC, *Wasp's* senior medical officer, effectively led his staff and pharmacist's mates in rendering care to their shipmates.

After the initial torpedo attack, *Wasp* continued to burn for over 5 hours. Since the illumination of the crippled carrier could disclose the location of other American vessels, she was abandoned and ordered sunk by USS *Landsdowne*. Only after ensuring the safe transfer of all wounded patients, LCDR Hogan and his staff abandoned ship. Following his rescue, Dr. Hogan continued to care for his patients. For those actions he was



RADM Bartholomew W. Hogan, MC

awarded the Silver Star, Purple Heart, and the Navy and Marine Corps Medal.

Ten years after World War II ended, Dr. Hogan was appointed 22nd Surgeon General of the Navy and 26th Chief of the Bureau of Medicine and Surgery. He died in March 1983.

Forty-seven years after *Wasp's* sinking, the Navy commissioned the 10th ship to bear that name in Norfolk, VA, on 29 July 1989. USS *Wasp* (LHD-1), the first of a new class of multipurpose amphibious assault ships, represents

new technology in support of a variety of missions. This new technology can also be found in *Wasp's* medical complex. Supported by state-of-the-art medical equipment, the medical department provides additional capabilities to the amphibious task force. These include: 600 beds supported by six operating rooms, clinical lab, blood bank (with frozen blood capabilities), and a pharmacy.

On 27 June 1990, the *Wasp* medical complex was formally dedicated to the memory of the late RADM Hogan. His son, CAPT Bartholomew Hogan, MC, and his family attended as did former crewmembers of the World War II *Wasp* (CV-7) and (CV-18). □

—Story by LT Benjamin G.M. Feril, MSC, USNR. He was the first Medical Administrative Officer aboard USS *Wasp* (LHD-1).





Courtesy CAPT Bart Hogan



Above: USS Wasp (LHD-1). Left: CAPT Bart Hogan and two of his father's shipmates.

Navy Medicine Prepares Its Officers for a Changing World

Strategic Medical Readiness and Contingency Course

LCDR Joyce H. Seidman, MSC, USN
CAPT R.D. Tackitt, MSC, USN

"SMRCC is the most meaningful course I have attended in my 20 years of naval service. It should be part of every officer's professional development. I feel that I am more of a naval officer now, not just a member of the Medical Corps."

"This outstanding course has challenged me to expand my understanding of geopolitical issues and factors involved in joint strategic planning and has given me motivation, direction, and renewed purpose for being CO of a large unit."

SMRCC graduates, June 90

Since 1979, the Naval School of Health Sciences in Bethesda, MD, has offered the Strategic Medical Readiness and Contingency Course (SMRCC) to senior Navy medical department officers who will assume

top management billets. For 2 weeks, active duty and reserve Navy physicians, nurses, health care administrators, and dentists leave behind the daily routine of their medical specialties to focus on the challenge of understanding the global forces transforming the world on the eve of the 21st century. Course participants have the opportunity to examine the political influences that form national and military policy and naval operational planning, practices, and doctrine required to translate policy into potential action.

Originally born the Advanced Health Policy and Planning Course, SMRCC reflects the Navy Medical Department's belief that senior officers—commanders and captains—will have greater authority and responsibilities in the support of operational commands and headquarters staffs. A primary objective of SMRCC is to sharpen the officer's ability to make sound decisions in both command and management positions by developing a coherent

framework for the analysis of decisions involving the deployable Navy/Marine Corps team.

Officers are thoroughly acquainted with three key areas: knowledge of the critical relationships for policymaking in the national government; the advanced operational medical support concepts necessary for early effectiveness in fleet, Fleet Marine Force, command, and higher headquarters levels; and the planning processes used by the Joint Chiefs of Staff (JCS), Chief of Naval Operations (CNO), and the unified commands in executing policy, including those used by staff officers to support a headquarters or operational commander.

Content and Context

SMRCC puts equal emphasis on the national and military decision-making environments where leadership is exercised and the fluid geopolitical environment that provides the context for strategic options. Navy Medical Department plans, policies, and issues confronting top management are discussed, including the Medical Department's initiatives to support national objectives and the operating forces during contingencies.

SMRCC combines both didactic and interactive training techniques to stimulate intraclass interaction and dialogue with instructors. As a capstone experience, participants take part in group problem-solving exercises using case studies that require synthesis of course information, critical evaluation of the issues, and the development of arguments in support of a position. Members of the class represent the points of view likely to be taken by the other services, CNO, the Navy Surgeon General, Congress, and the Office of the Secretary of Defense on proposals that affect the delivery of combat health care.

The case study illustrates how important it is to use a common language in determining medical planning assumptions, establishing service and joint requirements, and evaluating the likely outcome of the legislative process in a political atmosphere where competing agendas vie for scarce resources. It is the culmination of the course and in the words of a recent SMRCC graduate, provided "excellent insights into the workings of DC and the politics of decisionmaking and policymaking. This is an outstanding tie-in of the constellation of "larger" issues that have trickle-down effects on my day-to-day operations."

Civilian and military guest speakers expose participants to multiple perspectives in describing the current international environment and institutions in which policies and strategy interact. The July 1990 SMRCC curriculum, for example, included presentations by representatives from the White House, Department of State, Central Intelligence Agency, Congressional Research Service, Armed Forces Medical Intelligence Center, Defense Intelligence Agency, Naval War College, Chief of Naval Education and Training, universities and research institutions, CNO, Bureau of Medicine and Surgery (BUMED), Joint Staff, and the Army, Air Force, and Marine Corps.

Of course, the usefulness of SMRCC depends on the program's flexible response to rapidly evolving world events. The coordinator must continuously refine the program to ensure its consistency with current global events, a challenge exemplified by the tumultuous changes in Eastern Europe following the fall of the Berlin Wall in November 1989. Military imperatives for U.S. troop deployment in Europe changed dramatically as a result. These changes forced a reexamination of the extent to which the United States should spend scarce resources on defense during a period in which "peace is breaking out all over."

The upheaval in Eastern Europe and the concomitant lessening of superpower tensions led military planners to redefine how best to address these new relationships. While politicians and constituent groups began voicing strong opinions about how the expected "peace dividend" should be spent, the first major crisis of the post-Cold War era erupted with the Iraqi invasion of Kuwait on 2 Aug 1990.

Within days of the invasion, Operation Desert Shield was underway. The naval service deployed the most medical personnel to the Persian Gulf region; early on, the USNS *Comfort* and USNS *Mercy* constituted the largest single element of combat service support in theater. Currently, in addition to the hospital ships, the Navy has one fleet hospital established and two more en route.

The Iraqi invasion occurred while a SMRCC class was in session. The course took on a sense of immediacy and urgency as tensions escalated politically and militarily; speakers stepped to the podium with literally "up-to-the-minute" updates and tailored their presentations to the rapidly unfolding military and diplomatic situation.

By the end of the course, several SMRCC participants had left to staff the USNS *Comfort* and Fleet Hospital 5; some headed for other medical assignments in the Gulf region. Several of these officers have written to express their appreciation for the SMRCC training. One Medical Corps commander stated that the information gained from the training was excellent preparation for his assignment in the Gulf, that "it meant the difference between my success and failure." A Nurse Corps commander now serving with the Marines in the Gulf wrote, "Little did I know I would be living out all the concepts we discussed in SMRCC."

Changing Threats, Different Priorities

The crumbling of Cold War assumptions has led to changes in the conceptual thrust of the SMRCC curriculum. The Soviet conventional threat, including its impact on our medical readiness for general war in Europe, had always served as the basis for developing course objectives and content. While this threat has not been eliminated, its reduced intensity has led us to consider broader potential military roles and missions.

The Soviets remain a diminished, but still formidable global power to be reckoned with, and the possibility of

general war in Europe, however remote, continues to pose a challenge to how we plan and deploy our national resources. While SMRCC still addresses this issue, it also explores the probability of insurgencies and regional crises, especially low-intensity conflicts giving rise to potential contingency scenarios that include the likely involvement of the Medical Department.

Guest speakers provide the theoretical framework for international events through briefings on the status of political threats worldwide, terrorism, changes in U.S./Soviet/Sino relationships, the crisis of communism in the Soviet Union and Eastern Europe, national security strategy, the national security decision-making environment including the executive and legislative processes, and the role of the Joint Chiefs and National Security Council. The impact of the media on national defense policy is also presented, including techniques that military officers might use to deal effectively with the press on sensitive matters.

Our sister services provide informational briefings on the current status of Army and Air Force medical contingency support and concepts of combat casualty care and Marine Corps amphibious warfare doctrine to establish a common reference point for class members. Soviet capabilities including Soviet military medicine, the Soviet experience in Afghanistan, and Soviet readiness concepts of employment and deployment, are also presented.

Sessions on organization for national security and the maritime strategy introduce the readiness posture of the program. The Navy's capability to medically support the fleet and Fleet Marine Force is presented along with the current status and likely utilization of deployable medical systems such as the fleet hospitals and the hospital ships.

Sessions on strategic, headquarters-level and joint planning, and CONUS mobilization initiatives are both challenging and frustrating for course participants because of the recognition that the necessarily delicate coordination at all levels of the national and military bureaucracies directly influences and can inadvertently jeopardize the readiness capabilities of the Navy, the other services, and the United States. As one SMRCC graduate put it, "I have a new frame of reference to judge military decisions and world events and a better understanding of just how frustrating service and joint planning can be."

The Value of SMRCC

SMRCC performs at least two valuable functions. First, continuing education in which military officers are exposed to diverse issues and viewpoints that extend far beyond the military specialty is absolutely essential to the maintenance of an officer corps capable of meeting the challenges of our increasingly complex and interdependent world.

Second, the interaction between civilian guest speakers and military officers fosters the respect and mutual under-

standing without which civil/military relations cannot flourish in a democracy.

SMRCC is not a "how-to" course. Unlike technical training where acquisition of knowledge can be objectively measured by comparing pre- and post-test scores, the value of SMRCC to the individual officer and to the Medical Department must be assessed using qualitative, rather than quantitative criteria.

Evidence of the influence of this training program on the officer's professional development and job performance can be evaluated initially through anecdotal reports and feedback that the perspectives and insights gained as a result of the course have improved the officer's ability to participate in and manage the military decision-making process. For example, "I gained insights into how planners plan and how leadership is exercised and how I as an executive officer can influence and direct this process;" "SMRCC greatly expands one's awareness of how functions 'really' get accomplished in government and in the military environment;" "I have served as a department head aboard a forward deployed carrier for 2 years and made the entire USNS *Mercy* mission . . . my only regret is that I did not have the opportunity to take SMRCC earlier in my career;" and finally, "I have a clearer understanding of the big picture and how I as a commander in the Navy Medical Department fit in."

The ability to quantify the value of SMRCC over the long term is more difficult, but possible. The benchmark for measuring success is the Medical Department's continued ability to provide quality management and inspired leadership in a world of rapidly changing military priorities and strategic options.

SMRCC is a major training vehicle for ensuring that senior officers are empowered to make well-informed leadership decisions. The ability of Navy medicine to perform this task effectively in conjunction with other Navy components is just the type of synergy that results in wholly successful military operations and motivated officers who perform their jobs better because they know where they fit in the big picture.

The SMRCC program offers an innovative and forthright approach to meeting the needs of our Medical Department for highly skilled leaders having both applied skills and broad perspectives. It provides a unique curriculum that is tailored to the naval officer who services as health care professional and top level policymaker.

SMRCC is much more than a dissemination of information and policy. It fosters a feeling of team membership and demonstrates that the Navy Medical Department is willing to invest in the potential of its members. □

LCDR Seidman is Course Coordinator and Instructor in the Leadership and Professional Training Department, Naval School of Health Sciences, Bethesda, MD 20889-5033.

CAPT Tackitt is Director, Leadership and Professional Training Department.

Desert Storm's First Purple Heart

HN (now HM3) Clarence D. Conner, a corpsman attached to the 1st Marine Division in the Saudi desert since 9 Aug 1990, became the first American to be awarded the Purple Heart during Operation Desert Storm. On 28 Jan 1991, on Ward 12 of Fleet Hospital 5, MAJ Keith Kelly, XO of Conner's battalion, presented him with the award before a small group of patients and hospital staff members including CAPT Richard Mayo, MC, Fleet Hospital 5's commanding officer.

Early on the morning of 17 Jan, as the liberation of Kuwait began, Conner and seven members of his unit arrived at a location where they were to set up communications for a Marine battalion in an abandoned building near the Saudi-Kuwaiti border. Conner was one of four personnel providing security.

"All morning long we had been seeing artillery coming over. We couldn't see exactly where they were landing. We could just feel the vibrations from them exploding and they were quite a way away from us," the corpsman recalled.

Around 1500, Conner's unit began a "three-man up, one-man-go-to-sleep" watch. The team leader chose Conner as the first one to take a nap. The 21-year-old lay down on the ground beside the team's multi-purpose, multi-wheeled vehicle (humvee) with his flak jacket over his head.

"About 25 minutes later, I heard a whistle, like something was falling, then a whole bunch of explosions in a row," he said. "It all happened so fast."

As Conner pushed himself up off the ground he saw a line of explosions off to his right behind him until the last detonation. "When the last one hit, I saw a flash to my right and felt something hit me in the back, and I was knocked to the ground." He had been hit by a 2-inch by 1/2-inch piece of shrapnel, which tore a 3-inch hole in his trapezoid muscle, severing a nerve in his right shoulder.

Two others were injured during the artillery barrage; one marine sprained his ankle while running down the stairs in the building where the unit was trying to set up communications; another suffered a head laceration when jumping into a humvee.

"I got back up and saw people running out of the building, trying to get out so nothing would hit them," Conner remembered. "So I grabbed my weapon and gas mask, got into the vehicle, and we took off driving in a zig-zag formation so nothing else would hit us in a line." Another unit tasked with manning a bunker 500 meters behind the building, motioned Conner's team to join them.

"As we drove over there, I could feel something burning in the top of

my shoulder and I knew I had been hit by something." Because the shrapnel in Conner's wound was so deep, a medic from the other unit could only clean the wound, apply a pressure dressing, administer morphine, and request a medevac for Conner.

Delayed by dangerous flying conditions, a chopper arrived 2 1/2 hours later, taking the wounded corpsman to a medical facility with a Marine Surgical Support Team. By 2000 hours, Navy doctors had surgically removed the chunk of metal from Connor's shoulder in the facility's operating room.

Around 0100 the following morning, soon after Conner awoke in the facility's ICU, incoming Iraqi artillery exploded about 100 meters away. For 2 hours patients and staff took shelter until it was determined safe to resume a normal combat routine.

Later that morning, MAJ GEN James M. Myatt, commanding general of the 1st Marine Division, visited Conner and congratulated him on earning the war's first Purple Heart. MAJ GEN Myatt recalls Conner's first wish was not to be sent home but back to his unit.

Afterward, Conner was medevaced to Fleet Hospital 5, and finally back to CONUS, where he continues to convalesce.

—Story by JO2 Michael Dean, Fleet Hospital 5, Saudi Arabia.



Welcome to the Fleet!

Shipboard Orientation for the Reserve

CAPT John Bernard Henry, MC, USNR

CAPT Henry, fourth from left in front row, poses on board USS *Fahrion* with Commanding Officer CDR K. James Tackett on his left and Executive Officer LCDR David Hoppes on his right.

To achieve a full measure of satisfaction and pleasure while serving aboard ship, you should be aware of special expectations and needs associated with ship-board life.

Reporting Aboard

Upon boarding a Navy warship, it is important to salute the ensign (U.S. flag posted at the stern) and request permission to board from the officer of the deck (OOD): "Permission to come aboard, Sir." The OOD and other individuals are generally located on the quarterdeck which is the entrance on board the ship. The OOD will provide assistance and direct you to the wardroom or officers' country and subsequently assist in locating your stateroom.

Staterooms are one to two, mostly two, men assignments with double bunks and adequate drawers and storage space for clothing and personal belongings. In addition, there is a sink. At a variable distance will be a full bathroom and shower facilities to be shared generally with 10-12 others.

Be prepared to present your orders at boarding time or some subsequent designated time. Greetings with the executive officer (XO) and possibly the commanding officer (CO) should then be accomplished.

There are three key people aboard ship including the CO (skipper) who is always referred to as captain regardless of rank. The next individual is the XO and the third is the senior watch officer (SWO). You should request an opportunity to review the Ship Manning Document (SMD) for further information on the ship organization and activities. Each ship, depending on its size, has a variable Table of Organization below the CO and XO. This embraces divisions and departments that vary in complexity and breakout of key personnel.

The bridge is the center of most ceremonial functions at sea just as the quarterdeck is the center of most ceremonial functions in port. Men on the bridge are concerned primarily with operating the ship; hence, there are minimal ceremonial functions. Ships require all nonwatch personnel to request permission from the OOD to come on the bridge, accompanying such a request with a salute. If the CO is on the bridge, officers should make it a point of greeting the skipper at this time.

A ship is a complicated social structure with a culture of its own reflecting interactions of individuals and groups who have their own leaders and who respond to a variety of stimuli within the framework of the formal organization. In other words, there is both a formal and an informal organizational structure with the latter being quite as effec-

tive as the former. Be aware of both the informal undefined communication lines as well as the formal ones.

The division officer is key to his area. Depending upon the vessel's size, the division organization will vary in terms of number of officers and enlisted personnel as well as departments or units. It is appropriate to ask for a divisional organizational chart and breakout for orientation. Senior petty officers, often referred to as leading petty officers, have considerable experience, knowledge, and skills; they command respect and stature aboard ship as chief and first class petty officers and perform the immediate supervision of the men.

In addition to the chief petty officer (E-7), try to identify the senior chief petty officer (E-8) and master chief petty officer (E-9). The master chief petty officer is the senior enlisted technical or specialty person within his rating while the senior chief petty officer uses his broad training, knowledge, and experience in providing direction and supervision to enlisted men. The ship's senior enlisted member is designated the "master chief petty officer of the command" (MCPOC) or "senior chief petty officer of the command" (SCPOC). He serves as the senior advisor to all enlisted crewmembers.

Small ships generally do not have the luxury of a formal orientation program. Therefore, it is the newcomer's responsibility to learn his way around. After reporting aboard it is important to turn in your orders and service record to the Administration Office and health record to the medical department. You should also meet the XO and the officer of the day. You will then receive assignment to your section or department and be briefed on duties and hopefully, have a tour of your immediate area, namely the medical department.

Reading the ship's organization and regulations manual will provide further understanding and insight into the ship's operation. Familiarity with the department and division organizational manuals and pertinent instructions is strongly recommended.

You should seek out and receive practical instruction in emergency procedures including damage control and ship-board safety (i.e., general alarms, fire, and collision procedures), use and location of oxygen breathing apparatus (OBA), general electric shock hazards, and abandon ship station and procedure including lifejacket stowage.

In general, a ship is a sailor's home and therefore respect for an individual's privacy and property is expected. The ship watch organization is truly operational through watch standards and provides the necessary security to operate the essential equipment of the ship. Critical areas on board ship include the engine room, where the engineering watch

monitors the power plant underway, maintains ship- or shore-supplied steam, electrical power and fresh water, and takes soundings from voids and tanks. The communication watch maintains the flow of incoming/outgoing messages. The weapons and deck departments stand in port watches and monitor the magazines or when at sea man the helm, lookout stations, etc.

You will quickly differentiate a deck watch officer from division officer in terms of role and responsibilities which are vastly different for each. This is most obvious on the bridge. When the ship is underway, the watches are normally based on 4-hour periods, and there is no 24-hour duty period as is the case when the ship is in port. Watches are broken down into 2400-0400 midwatch, 0400-0800 morning watch, 0800-1200 forenoon watch, 1200-1600 afternoon watch, 1600-1800 first dog watch, 1800-2000 second dog watch, and 2000-2400 evening watch. The CO and XO do not stand watches. Administratively, the SWO is responsible to the CO under the direction of the XO for the assignment and general supervision of all deck watch officers both in port and underway.

The officer in charge of each deck watch is the OOD. Generally other officers are subordinate to him except the XO and CO and certain other officers aboard ship. In addition, there are engineering, communication, CIC watch officers and, depending on the size of the ship, a damage control watch officer as well as quartermaster of the watch. A junior officer of the deck (JOOD) is a principal assistant and next in line to the OOD. He assists the OOD in carrying out the duties of the watch in any way the OOD desires. Watches are usually relieved 15 minutes prior to change time.

The ship's "material condition of readiness" defines the damage control condition in force requiring certain fittings, hatches, and ports to be secured. Condition Four is a readiness condition that provides the optimum peacetime cruising watch consisting of an adequate number of qualified men for the safe and efficient operation of the ship. No weapons are manned in Condition Four, and the engineering plant is ready for speed as ordered. Material condition yoke is set for the normal watertight condition for an operating ship when not in battle. Condition One is general quarters with all hands manning their battle stations, with specific ones for medical officers.

Sick bay is the medical department space where chief hospital corpsmen or others (HM1, HM2, HM3, or striker hospitalmen apprentice HN, HA, HR) and medical officer when aboard conduct sick call, usually at 0800 and again at 1300 for a length of time to render care. It is important to have a thorough orientation to this space plus battle dressing stations (BDSs), usually two or more depending on size of ship. The BDSs are decentralized, e.g., main BDS for general quarters is sick bay and then other BDSs fore and aft so that at least one is likely to survive if the ship is damaged severely. Each BDS has supplies and equipment to provide triage, resuscitation, and initial definitive care

for up to half the ship's company. The main BDS offers the best resources for definitive surgical procedures and care after battle and is specially equipped for this purpose.

In addition, portable medical lockers (PMLs) provide decentralized, mobile, and flexible casualty handling of medical supplies during combat or emergency conditions. These chests are located throughout the ship and make possible on-site triage and initial resuscitation. There are also several first aid boxes on board which are much larger than the PMLs. Parts of the ship can become inaccessible during combat and prior distribution of first aid boxes is a requirement.

During combat, multiple serious injuries may occur simultaneously. Therefore, it is important to be familiar with "Mass Casualty Doctrine" (MCD). These are guidelines that apply to most emergency medical situations. Several of the primary features of the MCD are emphasis upon triage and involvement of nonmedical personnel in battle casualty care. The MCD is a frame of reference with specific instructions to be used by the crew to guide them through an emergency. Each ship's company or crew customizes the MCD to have specific applicability to their ship. The individualized MCD lists specific routes aboard ship for transporting casualties as well as evacuation procedures. Medical facilities aboard any ship may be compromised, and the location of sick bay may be inconvenient and casualty routing torturous. Adjacent spaces may be pressed into service as operating room suites and also wards. The MCD spells out specifically the responsibilities and actions to be taken by each member of the ship's crew in a mass casualty situation.

Shortly after boarding ship, you will be given an electrical hazard briefing. This brings home the risks of living aboard ship in terms of electrical hazards including shock and burns. If you bring aboard an electrical razor or any other electrical device, it will have to be turned in for safety checks. It will generally be returned to you within a day with an appropriate tag indicating that it is safe for use aboard ship. Other hazards aboard ship in addition to electrical are the potentials for fire due to fuel leaks and resulting in burns and inhalation. Explosions may also occur resulting in body burns, blast concussion, multiple extremity injuries, wounds, and fractures. In battle, burns, blasts, and inhalation injuries as well as wounds are of primary importance in terms of medical care.

Most of the demands in sick bay will focus on upper respiratory infections, sprains, and strains as well as sore feet. Steel decks, ladders, and rapid movement in all passageways appear to be very demanding on the knees and feet of individuals especially as they age. Senior chiefs and others who have been aboard ship for sustained periods will often complain bitterly about their knee and feet pain without obvious inflammation or apparent injury. Chief petty officers and other petty officers are extremely effective and efficient in handling sick call and generally will only involve the medical officer if needed.



CAPT Henry checks CDR J. Adam Lopez's blood pressure as part of a medical survey of the ship's crew.

Get to know the XO and ask him if you can accompany him on his daily tour of the ship, paying particular attention to safety and cleanliness conditions in all spaces (living spaces, food preparation, and serving area). It is the best way to become familiar with the ship in a hurry. These rounds usually occur at midmorning. The chief engineer or main propulsion officer can give you a good tour of the engine rooms and an appreciation for the hazardous environment, particularly the heat in these spaces. A ship must be 50 miles out at sea to operate its plumbing in regards to full use of water and toilet facilities on a regular basis. Likewise, the dependency of a ship on its desalinization machinery to make fresh water with periodic shortages of water should be expected. Use a minimum of water when showering at all times.

Orientation to a ship requires a redefinition especially when you're inboard. It is easy to be oriented when you are out on the ship's main deck, i.e., fore, aft, port (facing forward is on the left), and starboard (facing forward is on the right). The ship is divided into frames fore and aft and levels above the main deck and decks below the main deck. The lowest number of frames begin in the bow and proceed increasing in number aft to the stern. At night, running lights will be red for port and green for starboard. Types of spaces are also defined inboard by: A-supplies and storage, L-living quarters, E-engineering, F-fuel, X-administration, V-voids, W-water, and Q-miscellaneous. Cabins, living compartment spaces, are recognized below deck with separate areas for the chief petty officers and other enlisted personnel as opposed to officers' country.

Inboard on a ship, you should be able to look at a wall and see numbers painted in three categories. For example, 02-101-2-L: 02 refers to the deck or level, 101 would be the frame, 2 is port (1 would be starboard), and L would identify the type of space. Port is an even number and starboard is an odd number. Above the main deck, each level is referred to by number. The main deck is 01, the second level topside is 02, the third is 03, and the top is 04; on many ships this would be equivalent to the signal bridge. 03 might well be the bridge, 02 may be officers' country, and 01 chief petty officers' country.

There is a predetermined movement in the ship when general quarters is called in terms of moving forward and down on the port side and aft and up on the starboard side. During general quarters, rapid movement to one's battle station is critical to assure that one doesn't enter spaces that have either closed hatches, scuttles, or doors between compartments.

If you are fortunate and are on the bridge you might be given the opportunity to serve as helmsman (steersman), usually performed by a seaman from one of the deck divisions. On the bridge, the conning officer gives direction to the helmsman. He is the officer charged with directing the movements of the ship and may or may not be the OOD, again depending on the size of the ship. The lee helmsman, also a seaman from one of the deck divisions, is the helmsman's relief. He also transmits engine orders given to him by the conning officer to the engine rooms. Lookouts compliment and supplement Navy radar and sonar gear detection of not only ships, but also smoke, navigation markers, and other objects close to the ship. Lookouts normally wear sound-powered headsets and have binoculars. They report their sightings regarding bearing (or compass points) and range. Five short blasts of the ship's whistle denotes danger or sailing in restricted waters.

In terms of navigation the most important words are the ship's position (latitude and longitude), the ship's course or direction (tracking), the ship's speed (knots per hour), and the distance that is projected relating to time zones.

An average day aboard ship usually begins with reveille between 0500 and 0530 with breakfast served at approximately 0600. Depending on the number of officers, there is either one or two settings. One fills out a chit to indicate specific choices of breakfast. Food is more than ample and the coffee is excellent. It would not be difficult to gain weight aboard ship because of the high caloric content of the meals and the socializing which is accomplished concurrently with eating. There is generally one table with a seat set aside for the captain and another seat adjacent for the XO. Otherwise the officers disperse themselves on a first-come basis for breakfast. Lunches are more formal with officers usually standing by rank behind their chairs waiting for the captain to arrive and say grace and then being seated after his example. If one enters after meal serving has begun, it is proper etiquette to request permission to join the mess from the captain. Unless there is some designated person being awaited, the captain will generally grant this immediately. It is appropriate then to begin eating. Lunch may be from 1130 to 1300 and dinner is usually from 1700 to 1800. Dinner is more formal with one or two seatings. The captain again presides at this meal.

Usually at dinner there may be two discrete seating arrangements to facilitate the servings. After dinner is served, usually later in the evening, there may be a movie in the officers' wardroom. These are usually posted in advance and may begin between 1900 and 2000 at sea and run a few hours.

After reveille and breakfast, you generally have the opportunity to go to your quarters, tidy up your rack, and be prepared for Officers' Call, usually at 0730. At Officers' Call the XO addresses all of the officers in a group with specific information pertaining to the plan of the day (POD) or areas in particular need of attention or review. Subsequently, the officers disperse to their men in terms of department/division petty officers and other enlisted personnel to plan the day's activity. Usually this is all accomplished on the main deck toward the stern, depending upon the type of ship. Generally, Officers' Call is 15 minutes to ½ hour long. By 0800 everyone is returning to their respective division/department sections to begin the days duties and activities. There are often general sessions and specific meetings throughout the day that selected individuals or sometimes all the officers are invited. For example, a navigation brief to review entering a port would be appropriate on the day before and would be conducted in the wardroom with charts and detailed briefing.

It is recommended that the medical officer touch base in sick bay at times of sick call and access the number of needs, and then proceed accordingly to reading and reviewing material in sick bay or selectively touring areas of the ship. Such tours can be arranged with the navigation officer as well as the operations officer, combat information center, deck officer, weapons officer, supply officer, and if there are marines aboard, visit with the marines. In

general, these individuals are delighted to show you around their spaces and share with you their concerns and activities. A high degree of professionalism as well as sincere interest and pride in their ship and in their particular areas and assignments is usually evident.

Particular areas to identify shortly after arrival include the ship's store where incidentals such as toothpaste, brushes, clothing articles, and souvenirs may be purchased. Another area is the post office where you have the opportunity to purchase postcards, envelopes, stamps, and mail letters. Each has defined hours and are very accommodating. As mentioned under food services, or mess as it is referred to, there is a wardroom mess for officers, a CPO mess, and a general mess for the enlisted. You may expect a mess bill at the end of 1 week or 2 weeks, and this should be paid promptly in full. Your laundry will be done for you by the ship's laundry. Dry cleaning is usually at your expense.

All lights except in officers cabins and designated spaces are extinguished at tattoo (5 minutes before taps, usually 2200). Standing lights or red globes are available throughout the ship to allow good visibility. Material inspections focuses on cleanliness of each compartment. Personnel inspection focuses on clothing and gear. In foul weather when the decks are not available for mustering in the morning other assigned areas are selected or people go directly to their department or division (muster on station).

In port there are morning and evening colors with the ensign being raised at the stern at 0800 and evening colors at dusk or 1800. Underway, the ensign is flown from the mast. In port, the navy jack is flown at the bow and the ensign, if flown, at the stern.

When leaving the ship, it is appropriate to approach the quarterdeck and salute the officer of the day saying, "I have permission to leave the ship (or go ashore)." An affirmative answer would be "very well," or "permission granted." When crossing the brow, it is appropriate to then salute the ensign aft. Upon returning from liberty to the ship, it is appropriate to request permission to return aboard ship by saying, "I report my return aboard, Sir."

Additional Reading

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Dr. Henry is President, State University of New York (SUNY), Health Science Center, Syracuse, NY 13210-2399. He is also Officer in Charge (OIC) of the PRIMUS Unit (PO262A) for the SUNY Health Science Center and currently serves as Medical School Liaison Officer for the Ensign 1915 Program of the College of Medicine.

CDR Tackett (right) and officers bid farewell to CAPT Henry after he completed his tour aboard *Fahrion*.



Photos by PH2 Absalo

Highlights From the Naval Medical Research and Development Command

Bethesda, MD

• Hormone-Containing Nasal Sprays May Extend Diving Operations

Immersion of Navy divers induces diuresis (increased urine output) which can lead to dehydration and other unfavorable physiologic consequences. Furthermore, these untoward effects of immersion can be exacerbated by adverse environmental temperatures. Researchers at the VA hospital in East Lansing, MI, and at the Naval Health Research Center, San Diego, CA, are testing antidiuretic hormones that may prevent the undesirable effects of water immersion.

8-Desaminoarginine vasopressin (DDAVP), a long-acting synthetic analogue of a naturally occurring hormone, was tested for the ability to decrease immersion-induced diuresis. Results showed that a single, intranasal spray containing 20 micrograms of DDAVP decreased urinary water loss by nearly 90 percent with no reported side effects or reactions. Additionally, DDAVP decreased the urinary loss of salt. These findings indicate that DDAVP could prove to be an effective countermeasure for immersion diuresis and may markedly increase the operational underwater time of Navy divers.

* * *

• Red Blood Cell Enzymatic Conversion Process

During military conflicts, red blood cell (RBC) transfusion will be the primary treatment requirement for the majority of combat casualties. Part of a Navy strategic plan for increasing RBC supplies is to develop a technology to increase the availability of type O RBC, the single type usable in all emergency transfusions and the only RBC type being stockpiled by the DOD.

Navy-funded research, conducted at the New York Blood Center, focuses on converting the major RBC types A, B, AB to type O, by reversing natural enzymatic processes which attach the A and B antigens to the surface of the type O cell. The details of the A and B antigenic structures and the enzymes effective in their removal have been defined. In vivo and in vitro studies have shown that converted RBC no longer react with typing sera, survive normally in the heterologous recipient, do not stimulate antibody formation, and retain the ability to carry oxygen as well as normal cell shape

and membrane integrity. Clinical studies using converted type B cells are currently underway at the Rockefeller University's New York Hospital. Completing the development of enzymatically converted RBC will require additional clinical trials, enzyme scale-up and genetic engineering, FDA approval, and transition to the blood-banking industry for final implementation. This novel RBC conversion technology will effectively double the population able to donate RBC for DOD wartime use. Additionally, the process will minimize blood-banking logistics and could save civilian blood banks millions of dollars annually.

* * *

• National Marrow Donor Registry

Bone marrow transplantation is a very successful method of treating bone marrow suppression caused by disease, radiation, or chemical injury. This therapy has saved the lives of many individuals afflicted with leukemia and other malignancies. Being actively engaged in bone marrow transplantation research, the Naval Medical Research and Development Command (NMRDC) was tasked by Congress to initiate research addressing tissue typing for patients without related donors and to recruit National Marrow Donor Registry (NMDR) volunteers from the DOD community. Congress appropriated \$21 million to the Navy for supplemental funding of the NMDR and to initiate the DOD recruitment and HLA (human leukocyte antigen) typing activities.

NMRDC scientists at the Naval Medical Research Institute, Bethesda, MD, will expand existing HLA typing facilities and will type 14,000 DOD donors annually, develop automated procedures for HLA typing and matching, develop technology for clinical HLA typing by DNA methodology, identify antigens responsible for graft-versus-host disease, and automate virological screening procedures.

CAPT Robert Hartzman, MC, is managing the Navy program. For information on the registry or becoming a volunteer contact him at Commercial (301) 295-1847 or Autovon 295-1847.

For additional information on these or other medical R&D projects, contact NMRDC Code 40 at Commercial (301) 295-1468 or Autovon 295-1468.

The Coast Guard Medical Service

CWO Roderick S. Hooker, USCGR

TABLE 1
U.S. Coast Guard Operating Programs

Aids to Navigation (lighthouses, buoys, channel markers, LORAN stations)

Boating Safety (enforces boating regulations)

Defense Operations (port security, coastal defense, wartime readiness)

Environmental Response (pollution response in marine environments)

Ice Operations (ice breaker roles and scientific organization support)

Maritime Law Enforcement (enforces law on the U.S. waters and interdicts drug smuggling)

Marine Inspection (enforces standards and policies of commercial and merchant vessels)

Marine Licensing (certifies Merchant Marine officers and seamen and commercial vessels)

Marine Science (provides weather, iceberg, and other oceanographic services for federal services)

Port Safety and Security (protects and manages ports from accidental or intentional damage or injury)

Search and Rescue (renders aid to people, vessels, aircraft, and property in distress in marine environments)

Waterways Management (develops marine traffic management techniques for safe vessel movement in major port)

The U.S. Coast Guard (USCG) is sometimes referred to as the fifth branch of a four-branch military service. In peacetime it performs a domestic role under the Department of Transportation (DOT). While the missions of the USCG tend to change depending on budgets and national priorities, overall it largely functions to manage the care of coastlines, ports, and riverways (Table 1). There is also a wartime readiness role and, in national emergency, the USCG shifts from the DOT to the Department of Defense (DOD) to become an arm of the U.S. Navy (USN).

The medical service of the USCG is supported by the Department of Health and Human Services. Physicians, dentists, and pharmacists in the USCG are from the commissioned corps of the U.S. Public Health Service (USPHS). As part of the USCG Health Services Office, they wear the USCG uniform but retain the USPHS insignia to distinguish them as health officers.

The role of the USCG Health Service Branch is to manage the health care needs of its 37,000 active duty members. When personnel and space are available, they extend this care to dependents and retirees. In situations where services are limited, care is sought through other military medical clinics, USPHS facilities, and civilian contract care.



USCG Cutter *Northland*

U.S. Coast Guard Photography/Video

Health services technicians (HS), medical administrative officers, and physician assistant (PA) medical officers provide health care in the USCG. Since there are no limited duty officers (LDOs) or Medical Corps in the USCG, the latter two are warrant officers. HS personnel are the former hospital corpsman (HM) and dental technician (DT) modeled after the USN.

At a time of diverse health care demands and medical technology, the USCG decided to create a generic HS that could perform a variety of medical, dental, administrative, technical, nursing, and pharmaceutical services. This consolidation was consistent with the new independent direction the USCG created by developing their own corpsman school in 1974 instead of retaining slots in USN schools to

train HMs and DTs. Some specialty training for HS personnel as well as the other services for select technician roles is still provided by the USN.

The number of USPHS medical officer billets in the USCG has diminished over the past 10 years, many being replaced by PAs. While some of the billets are filled by independent duty PAs aboard ships such as ice breakers, the majority are in USCG

Coast Guard medium range surveillance *Guardian* HU-25A

TABLE 2
Coast Guard Medical Personnel

USCG	Active Duty	36,780
	Reserve Billets	12,500
	Physician Assistants	26
	Reserve	30
	Medical Admin Officers	20
USPHS	Physicians	60
	Other Health Officers*	104

*Dentists, pharmacists, physical therapists, environmental engineers



facilities in association with USPHS officers. Most of the physicians and PAs are general medical officers and graduates from civilian medical programs. PAs are warrant officers (Table 2).

Lacking a Medical Service Corps, the USCG relies on an ascension of HS personnel to warrant medical administrative officers. Where necessary, line officers, medical officers, and petty officers also fill medical administrative roles. USPHS hospitals are limited and most admissions and procedures are done in DOD facilities. There are no nurses in the USPHS that wear the CG uniform.

The relationship of the Reserve component of the USCG reaches beyond the traditional mobilization and training roles the other services perform. Giving credence to the concept of "one service," the Reserves augment the "regulars" for weekend drills

and frequently fill manpower gaps during their 2 weeks active duty. Since there are no reserve USCG physicians, it's not unusual for a USCGR PA to perform a "locum tenens" for a medical officer so that the active duty physician can take leave without interrupting medical care.

The future of the USCG Health Service in its present form is unclear. One suggestion is to integrate it into the USN and then, in a lend-lease arrangement, have the USN provide medical care to the USCG. This proposal, similar to the model used for the Marines, was developed a few years ago but for various reasons was scuttled. Another scenario includes integration of PAs in the USPHS. This scenario seems tenable; however, without a paid USPHS-reserve, it leaves reserve PAs without a billet or agency to contain them, nor an opportunity for HS to apply for a USCG-supported PA school. Corps-

men and medics are regarded as important resources to supply PA programs.

One advantage of an active reserve Medical Corps in the other services is the pool of knowledge made available by reserve and active duty working together. Currently, this exchange tends to take place only on the HS and PA level in the USCG.

While there are remedies underway to stem the tide of physicians leaving the military in general, USCG physicians have also expressed dissatisfaction with some of the select roles unique to their setting: isolated billets, sparsity of specialty roles, limited access to advanced technologies, lack



U.S. Coast Guard Photography/Video

of adequately trained support personnel, and burdening administrative responsibilities.

As military medical planners endeavor to deal with the complexities of their task—shifting priorities and increasing demand for health care services—it seems likely that trilateral relationships will further develop under the DOD roof to ensure the exchange of ideas. The economy of scale the other services enjoy allows them to implement certain cost-saving strategies to improve the management of military health care. Whatever these strategies are, the shape of military health care will certainly change. What is not certain is if the health services

sector of the USCG will have the capacity to change to keep in line with their DOD peers.

Although the USCG has some unique roles that would be untenable if they were under the DOD (drug interdiction, law enforcement, fisheries violations, environmental monitoring, maritime licensing, etc.), few believe the Coast Guard has the capacity to continue a quality health care program that can keep up with the medical services in the other armed forces. □

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Amenorrhea:

Diagnosis and Management

MAJ Richard T. Scott, Jr., USAF, MC
CDR Charles C. Coddington, MC, USN

Amenorrhea is a symptom and not a disease entity. The term amenorrhea means complete absence of menstruation for a period of 3 months or more. It may be caused by a multitude of disorders involving the central nervous system (CNS), the reproductive tract, other endocrine systems, or systemic illnesses. The key to understanding how to diagnose and manage these disorders is a thorough history and physical examination augmented with specific laboratory testing. A generalized systematic approach will be presented.

CNS

CNS amenorrhea is among the most common yet least understood of the clinical disorders presenting with amenorrhea. These disorders are characterized by an alteration in the normal pulsatile release of GnRH into the portal circulation. These disorders may result from altered stimulation of the hypothalamus by higher neural centers, dysfunctions within the hypothalamus itself, or interruption of the portal circulation which delivers the GnRH to the gonadotropes in the pituitary. Altered GnRH activity has been implicated in psychogenic amenorrhea, anorexia nervosa, exercise-induced amenorrhea, and in a variety of congenital and destructive disorders.

The diagnosis is made by a careful history and physical examination and confirmed by serum LH, FSH, and E₂ levels. The history should include an assessment of stress, specific dietary and exercise histories, headaches, galactorrhea, the timing and nature of pubertal changes, any hypoestrogenic or hypothyroid symptoms, or any evidence for other types of hypothalamic dysfunction. The physical examination should include evaluation of estrogen status and secondary sexual development and specifically note any evidence of thyroid dysfunction or phenotypic abnormalities.

Disorders causing CNS amenorrhea are characterized by hypogonadotropic hypogonadism; i.e., low or normal gonadotropin levels in the face of low peripheral circulat-

ing sex steroids. They are distinguished from disorders of the pituitary by a normal pituitary response to long-term pulsatile GnRH infusion.

GnRH stimulation tests are of limited value since the secretory response is probably related more to the baseline gonadotropin level than the underlying clinical disorder. Even in those cases where differences in the populations are present, the confidence intervals overlap and do not permit discrimination of a specific diagnosis. In cases of prolonged amenorrhea (greater than 6-12 months) or if there is any question as to the exact etiology, a CT scan of the hypothalamus and pituitary is indicated to rule out a destructive lesion.

Treatment is directed to the underlying disorder when possible. In those cases where the hypoestrogenism has been present or is anticipated to last greater than 6-12 months, estrogen replacement should be considered to maintain estrogen dependent tissues and prevent osteoporosis. The decision to provide replacement therapy is difficult since it can mask a return of normal function.

Serial assessment of bone mass or density has been advocated as one means of following these patients with replacement therapy indicated if decreases are found. Single and dual beam photon densitometry, quantitative CT scanning of the vertebra, and total body calcium determinations have been shown to correlate only roughly with fracture index and prospective evaluations of management when these techniques are lacking. Caution should be employed when allowing these patients to remain hypoestrogenic for prolonged periods of time. In those cases where the underlying disorder is not correctable and the patients desire fertility, successful ovulation induction is possible through pulsatile GnRH administration or exogenous gonadotropin stimulation.⁽¹⁾

Psychogenic amenorrhea is defined as a stress-induced lack of menses. It may present in a wide variety of clinical settings including those which the patient herself may not consider particularly stressful. The diagnosis is suggested

by an associated change in the patient's lifestyle, work, or relationships in the absence of other physical pathology. While the precise etiology remains unclear, there appears to be a diminution in GnRH secretion as detected by decreased gonadotropin pulses in the peripheral circulation. LH and FSH levels are not elevated although the FSH to LH ratio may be slightly increased.(2)

The key to diagnosing this condition lies not in laboratory evaluation but rather in the recognition of potentially stressful factors in the patient's life in the absence of other pathology. Prior to making this diagnosis, destructive lesions of the CNS must be ruled out. This is accomplished via CT scanning and is indicated in all patients with 6 or more months of amenorrhea which has been attributed to psychogenic causes.(3) Treatment is based on reassurance and with measures to reduce the stress. The patient will have normal ovulatory and menstrual function when pulsatile GnRH activity resumes.

Nutrition plays an important role in normal reproductive function and aberrations are manifested at the hypothalamic level. Anorexia nervosa has a well-established association with amenorrhea.(4) Simple weight loss of 10-15 percent may also be associated with hypothalamic dysfunction.(5) Both states are associated with hypoestrogenism and low gonadotropins without pulsatile release. Mild hypothyroidism is common.

Anorexia may be differentiated from patients with simple weight loss by the absence of associated psychologic problems in patients with simple weight loss. Treatment is directed to the underlying disorder. Management of anorexics requires a multidisciplinary approach including a psychiatrist and an internist. Adequate dietary counseling is usually adequate for those patients with simple weight loss.

Exercise-induced amenorrhea has become increasingly common as more women undertake regular exercise programs. There is no absolute level of exercise which will produce menstrual dysfunction; however, several studies have shown that the strenuousness and duration of the exercise and the severity of menstrual disturbance are correlated.(6) The specific etiology of the hypothalamic dysfunction remains unclear but may involve increased opioid tone in the CNS. Opioid tone has been shown to inhibit GnRH release. The quantity of nutrition relative to caloric expenditure and the low percentage of body fat found in these patients may also contribute to this disorder.

Patients with exercise-induced amenorrhea are less likely to demineralize than other hypoestrogenic patients and when they do the bone loss is generally less severe. Nevertheless, this group of patients does show accelerated bone loss and an increase in fracture incidence relative to normally cycling controls with similar exercise schedules.(7) For these reasons, cyclic estrogen replacement therapy may be indicated.

There are a number of clinical disorders associated with

isolated gonadotropin deficiency. These patients present with hypogonadotropic hypogonadism and usually have primary amenorrhea. The most common of these is Kallman's syndrome which has associated anosmia.(8) There appears to be an isolated lack of GnRH since other hypothalamic functions are normal and the pituitary response to pulsatile GnRH administration is appropriate. Treatment consists of cyclic estrogen replacement therapy and ovulation induction when the patient desires pregnancy.

Hypercarotenemia may induce hypothalamic amenorrhea.(9) The disorder is characterized by an abnormal elevation of plasma carotene levels and may be seen with increased intake of carotene-rich foods or in pathologic states such as diabetes, hyperlipidemia, hypothyroidism, nephrotic syndrome, and anorexia nervosa. The diagnosis is made by a history of increased intake of carotene-rich foods, yellowish discoloration of the palms, the absence of sclericterus, and elevated serum carotene levels. The mechanism of the hypothalamic dysfunction is unknown. Treatment is principally via dietary restriction and the patients can be monitored with serial carotene levels. When levels return to normal, menstrual function may resume.

Destructive lesions of the hypothalamus may result from any process which destroys or impinges on the hypothalamus, the neuronal tracts leading into the hypothalamus, or the pituitary stalk. This includes a wide variety of disorders including granulomatous, infectious, neoplastic, vascular, and infiltrative processes. The clinical manifestations vary widely depending on the underlying clinical disorder. This class of disorders should be suspected when there are other associated hypothalamic dysfunctions or if the patient has any psychologic or neurologic symptoms. The diagnosis may be confirmed through computed tomography and the treatment directed to the underlying etiology.

Pituitary

Hypopituitarism resulting from pituitary infarction, pituitary tumor, infiltrative diseases, or as a result of surgery or irradiation may lead to inadequate gonadotropin secretion and amenorrhea. The diagnosis is made through history, physical examination, and appropriate provocative testing of the pituitary.

The most common pituitary insufficiency is Sheehan's syndrome which is a sequelae to pituitary infarction following a hypotensive episode in the antepartum or peripartum period.(10) The hypertrophy and hyperplasia of the lactotropes which occurs during pregnancy partially compromises the vascular supply and makes the pituitary more sensitive to ischemia at the time of any hypotensive episode.

Clinical symptoms are rarely seen unless more than 75 percent of the gland is destroyed. A hierarchy of hormonal loss has been noted with prolactin and gonadotropins most sensitive, then growth hormone, followed by thyroid hormone, and finally by corticotropin (ACTH). This proba-

bility reflects the predominantly peripheral location of the lactotropes and the gonadotropes which make them more susceptible to vascular compromise. The absence of lactation after delivery should alert the clinician to this diagnosis. This and the amenorrhea may be the only symptoms; however, in more severe cases evidence of hypothyroidism or corticosteroid deficiency may be present.

Diagnosis requires measurement of the pituitary hormones and frequently provocative testing of their secretion. These patients will not respond to GnRH and generally have a blunted PRL response to TRH stimulation. Therapy consists of replacement of the deficient pituitary hormones. Estrogen replacement therapy is given in lieu of LH and FSH. If the patient desires to become pregnant, exogenous gonadotropins are indicated.

Infiltrative diseases such as sarcoidosis, hemochromatosis, and histiocytosis can present with pituitary insufficiency. There can be local destruction of the pituitary or interruption of flow through the portal circulation which blocks any hypothalamic influence. Diagnosis can be made by a complete history and physical and computed tomography of the pituitary. Subsequent treatment is based on the underlying disorder.

Pituitary tumors account for approximately 10 percent of all intracranial tumors, and high resolution CT scanning has increased the number of these tumors diagnosed.⁽¹¹⁾ The most common type of adenoma secretes prolactin. Hyperprolactinemia may result in amenorrhea by attenuating the response of the gonadotropes to GnRH at the pituitary level and by altering follicular development at the ovarian level. The hypothalamic secretion of GnRH may also be affected by the increased dopaminergic tone which may accompany hyperprolactinemia. It is beyond the scope of this summary to review the treatment of hyperprolactinemia and prolactinomas, but most treatment regimens initially use dopamine agonists such as bromocriptine.

Adenomas which secrete growth hormone and ACTH are also encountered and may result in decreased gonadotropin secretion and subsequently to amenorrhea. FSH secreting adenomas are rare. When they occur they are frequently associated with hyperprolactinemia and are commonly associated with amenorrhea. Tumors which secrete gonadotropins are extremely rare and generally occur in men, thus making them an unlikely part of the differential diagnosis in amenorrhea. A neurosurgeon should be consulted, and therapy should depend on the type and size of the tumor.

Ovarian

Ovarian causes of amenorrhea can be divided into three general categories. These include congenital defects, resistant ovary syndrome, and premature ovarian failure.

Congenital defects includes gonadal dysgenesis, androgen insensitivity, and hermaphroditism. Gonadal dysgenesis refers to those patients who have developed streak

gonads.⁽¹²⁾ Turner's syndrome is an example. These patients are 45,X and have a characteristic phenotype. The determinant for the phenotype is on the long arm of the X chromosome between loci 13 and 26. The critical loci for gonadal determination are on the short arm of the X. Gonadal dysgenesis patients do not have to be 45,X and approximately 40 percent are mosaics. Additionally, there are individuals who are 46,XX and 46,XY (Swyer's syndrome) who develop streak gonads. The etiology of the loss of germ cells in these cases is unknown.

Diagnosis is made when the patient has a history of primary amenorrhea, a lack of secondary sexual development, and, in many cases, an abnormal karyotype. Treatment consists of estrogen replacement therapy, and pregnancy may be achieved through oocyte donation in vitro fertilization and embryo transfer.

Androgen insensitivity must be included in the differential of primary amenorrhea. These individuals have an inability to respond to androgen stimulation in spite of normal circulating androgen levels. They have a normal female phenotype except for the absence of a muellerian system whose formation was inhibited by the elaboration of anti-muellerian hormone during embryonic development. Various other forms of pseudohermaphroditism and true hermaphroditism may present as primary amenorrhea.

The resistant ovary syndrome or savage syndrome was first described by G.S. Jones in 1969 in three patients with hypergonadotropic amenorrhea but who has apparently normal follicular apparatus at the time of ovarian biopsy.⁽¹³⁾ Patients may present with primary or secondary amenorrhea, with the average age of onset being 21 years.

The diagnosis requires that the patients have elevated gonadotropins, low estradiol levels, normal secondary sexual development, the absence of autoimmune disease, normal internal and external genitalia, and primordial follicles present at the time of ovarian biopsy. They should also fail stimulation with exogenous gonadotropins which would rule out bio-inactive gonadotropin production. The diagnosis is rarely made since ovarian biopsy is required and is generally not indicated. Treatment is via estrogen replacement therapy and when, and if, the patient desires pregnancy, oocyte donation.

Premature ovarian failure is the final major category of ovarian amenorrhea.⁽¹⁴⁾ There are a number of causes including exposure to environmental or pharmacologic toxins which deplete germ cells, prior radiation therapy, autoimmune disorders, and chromosomal disorders. The chromosomal disorders are generally associated with primary ovarian amenorrhea although mosaics may present with secondary amenorrhea. The most common germ-cell toxins are chemotherapeutic agents, especially the alkylating agents. Radiation therapy to the pelvis may result in ovarian failure. The dose required depends on fractionation.

Autoimmune disorders are a major cause of ovarian failure. Antibodies against ovarian tissues are commonly associated with antibodies to other endocrine tissues including the adrenal and thyroid glands.⁽¹⁵⁾ One recent report found 39 percent of patients with premature ovarian failure. The various assays which test for ovarian antibodies may vary from one lab to another. Little information is available concerning sensitivity, specificity, and predictive value. Histologically, the ovary may show lymphocytic infiltration and plasma cells.

The evaluation of these patients requires a detailed history concerning any associated autoimmune or endocrine disorders, family history of premature menopause, prior medical, surgical, or radiation therapy, and environmental toxin exposure. The physical examination is directed toward these systems. Laboratory evaluation includes measurement of gonadotropins which should be elevated, estradiol which is generally less than 30 pg/ml, assay for thyroid, adrenal, and ovarian autoantibodies, an antinuclear antibody titer, a CBC to rule out pernicious anemia, and calcium and phosphorous levels to assess parathyroid function. Karyotypes are indicated in patients under the age of 35 and in patients who have other risk factors for congenital disorders.

In patients who do not desire pregnancy, estrogen replacement therapy is indicated. In those cases where an autoimmune disorder exists, treatment with corticosteroids may lead to resumption of ovarian function when patients desire to conceive. Patients with other types of ovarian failure require oocyte donation in order to conceive. Several authors have reported that some patients may occasionally spontaneously resume normal cyclic ovarian function; however, this is rare and should not discourage the administration of replacement therapy or attempts at pregnancy through oocyte donation.

Uterovaginal Diseases

Patients may have amenorrhea secondary to disorders of the uterus and vagina. Congenital obstruction of the outflow tract as in imperforate hymen, transverse vaginal septum, or any degree of muellerian agenesis will lead to primary amenorrhea. Diagnosis and treatment are related to the specific disorder.

Secondary amenorrhea may result when obstruction of the outflow tract occurs after menarche. The most common example is Asherman's syndrome which is an obstruction of the endometrium or endocervix secondary to scarring.⁽¹⁶⁾ This presents most commonly following a D and C in peripartum period. Some patients may report cyclic pelvic pain reflecting obstruction and possibly the development of a hematometra. Endocrine evaluation is normal. Treatment is with hysteroscopic lysis of the adhesions. A pediatric foley may be left in the uterus for approximately 5 days to assure that the walls are separated. The patients are given aggressive postoperative estrogen therapy; typically conjugated equine estrogens

2.5 mg POqd for 3 weeks. Prophylactic antibiotics are also required.

Summary

Amenorrhea is a symptom that may be the manifestation of a variety of CNS disorders, endocrine diseases, abnormalities of the uterus and vagina, and systemic illnesses. A careful history with special attention to the time period preceding the onset of the amenorrhea, together with a physical examination, should provide all the clues necessary for a final diagnosis. Laboratory tests should be selective and complement the history and physical examination, not substitute for them. If these tenets are followed, the physician should arrive at the correct diagnosis and select the appropriate treatment.

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To the Editor

Geneva Conventions

The fascinating experiences of CDR Miguel Arcacha from the July-August 1990 *Navy Medicine* prompted me to send this letter. CDR Arcacha's adventures are a testament to his coolness under fire, and to the calibre of people we are lucky to have in the Naval Reserve. This man was stranded in scary and unusual circumstances. Because of his status, some of my comments below may *not* apply to his particular adventure; they are very definitely not critical of Dr. Arcacha. However, some very important issues about the Geneva Conventions pertaining to medical personnel must be addressed. With combat threatening by an unpredictable and barbaric enemy, we must be familiar with our obligations under the Geneva Conventions.

Medical people are, of course, just as patriotic as our brothers and sisters in arms. Therefore, patriotism and bravery may at times lead medical people to heroically take up arms when they should not. We often forget that our protected status as "noncombatants" is not selfish protection just for ourselves; it is so we can under all circumstances be allowed to care for our patients. This is a sacred trust. It also has very significant practical ramifications.

Briefly, medical personnel are obliged to maintain health and to care for the sick and wounded. It is obvious that these duties are critical to winning the war, but they are "noncombatant" in that we may not enter combat functions. A weapon for self-protection is permissible but must be only a carried personal weapon such as a pistol or rifle, not grenades, flamethrowers, etc. The weapon is for the protection of the patient and medic from marauders (in fact, not even for the prevention of capture in some people's view). While medics may establish perimeter sentries for protecting medical compounds from marauders and brigands, they cannot place weapons or firing positions inside windows of a medical post for the purpose of directing fire at the enemy. By retaining a role as a noncombatant, captured medical personnel are protected as "retained personnel" and are obligated to identify themselves as medical because the captors are also obliged to enable them to perform their *protected medical functions* for other prisoners. It is the *medical mission* that is protected.

Navy Regulations, article 0845, states that medical and dental personnel and chaplains, "... shall be detailed or permitted to perform *only* such duties, in peace or in war, as are related to medical, dental, or religious service ..."

Manual of the Medical Department 9-8(1) "... All duties of hospital corpsmen must be concerned with the care of the sick and injured, the prevention of disease or injury, or the administration of medical departments ..."

Article 24 of the 1949 Geneva Convention for the Amelioration of the Sick and Wounded: "Medical personnel exclusively engaged in the search for, or the collection, transport, or treatment of the wounded or sick, or in the prevention of disease, staff exclusively engaged in the administration of medical units and establishments, as well

as chaplains attached to the armed forces, shall be respected and protected in all circumstances." However, article 21 says that protection shall cease if medical people commit acts hostile to the enemy.

This is not easy. *MANMED* 9-8(1) says, "At times adherence to the provisions may be burdensome ..." but the regulations do not say "when battlefield circumstances permit ..." nor does it say "this can be waived for special circumstances." These are *our* responsibilities even if others do not follow them, and even when very hard.

CDR Arcacha led forces that stormed a house, led parties to capture weapons, and accepted the surrender of a Panamanian. He is a brave man, who did his best in the service of his country. However, he may have unwittingly violated the Geneva Convention for the protection of the sick and wounded of 1949. The article says that he *identified* himself as a *Navy surgeon* and performed an operation at a military hospital several days *before* his combatant actions. We are not permitted both roles, to be both shooters and doctors, however brave, selfless, and patriotic the motives may be. Our duties in patient care and obligations to the International Law of the Geneva Conventions are too important. The final quote in the paper may mislead members of the Medical Department, even though it is earnest and *partly* correct. "I couldn't hide and wait for the fighting to end, so I helped in the best way I knew how, in the capacity of a medical surgeon (I think he meant military surgeon) and as a military officer." A military surgeon indeed *needs* to be a military officer with all that the word "officer" implies. But we *cannot* lead raids, direct fire, etc.

To be a noncombatant is an obligation, a *responsibility*; not a cop-out. It is not just a "waiting for the fighting to end." It is a responsibility we cannot waive, either. Article 7 of the Geneva Convention for the wounded and sick says, "Wounded and sick, as well as members of the medical personnel and chaplains, may in no circumstances renounce in part or in entirety the rights secured to them by the present Convention ..."

Corpsmen are the most conspicuous examples of bravery in the Medical Department, and the most highly decorated. This is not a question of valor, but of law. Adherence to law and principle is a big part of what sets America apart. That some of our enemies may neglect these principles does not mean that we should. It would be a mistake to permit even the most honorable of emotions to allow us to turn our backs on the Geneva Convention.

Finally, *MANMED* 1-21 says, "Officers of the Medical Department shall familiarize themselves with the Geneva Conventions." This would be good advice, even if not a directive. Two pertinent publications are "Annex to Naval Warfare Information Publication 10-2, Law of Naval Warfare" (available to all ships and stations) and Department of the Army Pamphlet 27-1, "Treaties Governing Land Warfare."

CAPT T. Riley, MC

In Memoriam

VADM **George G. Burkley**, MC (Ret.), White House physician under Presidents John F. Kennedy and Lyndon B. Johnson, died of pneumonia on 2 Jan 1991 in Los Angeles, CA.

Dr. Burkley was born in Pittsburgh, PA, on 29 Aug 1902. He received his BS and MD degrees from the University of Pittsburgh. Prior to entering the Navy in 1941, he practiced medicine in Pittsburgh.

Dr. Burkley began his Navy career as a lieutenant commander. During World War II he served in the South Pacific with Naval Mobile Hospital No. 5 on New Caledonia before returning to the United States in 1944 to become a ward medical officer at Naval Hospital, Bainbridge, MD. He left active duty at the conclusion of the war.

In 1946, Dr. Burkley returned to active duty status and reported as chief of medicine at Naval Hospital, Charleston, SC, a year later becoming chief of medicine at Naval Hospital, Memphis, TN.

Following attendance at Walter Reed Postgraduate School of Basic Science in Washington, DC, Dr. Burkley served as chief of medicine at Naval Hospital, Newport, RI, and had a similar assignment at Naval Hospital, Portsmouth, VA, from 1955 to 1957. He then became chief of medicine at the Naval Dispensary, Washington, DC. He assumed command of that activity in 1959, and while there was named physician to Camp David, the presidential retreat in Maryland's Catoctin Mountains. In 1959, he accompanied President Eisenhower on his tour of the Far East.

In 1961, Dr. Burkley became assistant White House physician during the Kennedy administration and later succeeded White House physician Janet Travell as the President's personal physician. He held the same post under President Johnson.

Dr. Burkley was with President Kennedy's motorcade in Dallas, on 22 Nov 1963, and later accompanied the slain President's body back to Washington.

VADM Burkley retired in 1968 at the close of the Johnson administration.

CAPT **Carl E. Pruett**, MC (Ret.), died 22 Jan 1991 at the National Naval Medical Center, Bethesda, MD, of Legionnaires' disease.

Dr. Pruett was born in Kinmundy, IL, on 17 June 1920. He attended the University of Illinois, receiving an MD degree in 1943. From 1943 to 1944, he served an internship at Naval Hospital, Portsmouth, VA, becoming assistant medical officer for Amphibious Forces LSMs. He graduated from the Naval School of Aviation Medicine in 1946 and was then assigned to the Naval Air Advanced Training Command, Corpus Christi, TX, as a flight surgeon.

Dr. Pruett left active duty in 1947 and pursued a general medical practice in Effingham, IL. The following year he came back on active duty as assistant medical officer and flight surgeon at NAS Norfolk, VA. In 1951, he reported

aboard USS *Saipan* (CVL-48) as senior medical officer.

From 1952 to 1953, Dr. Pruett was head of the Physical Qualifications Section in the Aviation Medicine Division of BUMED. From 1953 to 1955, he served as aviation medical safety specialist in the office of the Deputy Chief of Naval Operations for Air. In 1957, he reported aboard USS *Philippine Sea* (CVA-47) as senior medical officer.

In 1958, Dr. Pruett reported to the U.S. Air Force Aeromedical Laboratory, Dayton, OH, as chief of the Biomedical Division. From 1959 to 1962, he worked at the Pacific Missile Range, Point Mugu, CA, where he helped establish the Pacific Missile Bioscience Office and Life Science Department of the Naval Missile Center. He was also a medical monitor for NASA's Project Mercury and was flight surgeon monitor for the first U.S. orbital flight of astronaut John Glenn.

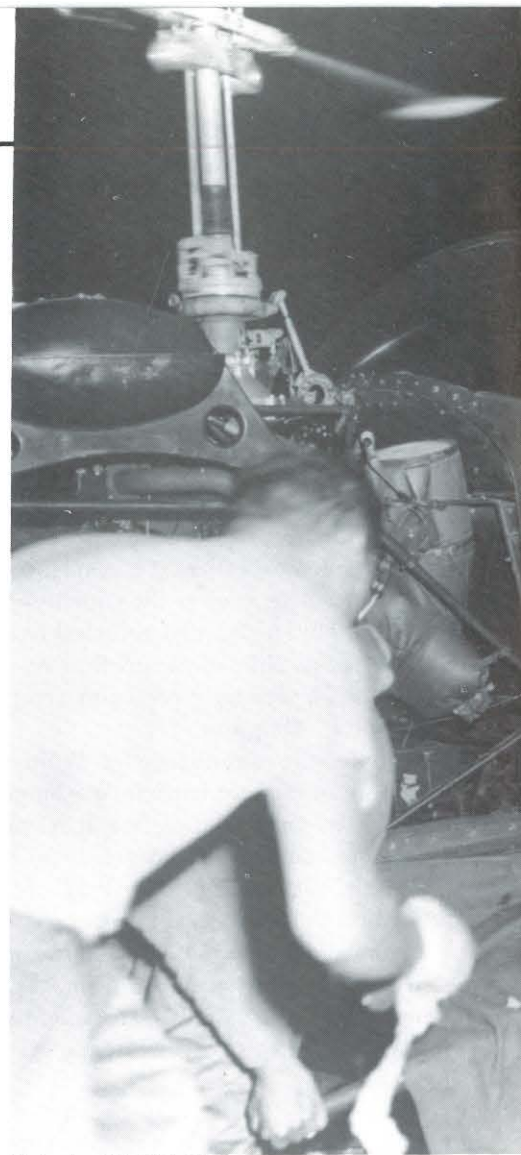
Later in 1963, Dr. Pruett went to Washington and served in the office of the Deputy Chief of Naval Operations as assistant for medical and allied sciences. He then served as assistant director, Research Division, BUMED until he retired from the Navy on 1 Aug 1973.

In retirement, Dr. Pruett maintained an active interest in Navy medical history, collecting books and documents, and always making his collection available for researchers. Shortly before his death, he had just completed documenting the career of his uncle, RADM Clyde Camerer, MC, who had been commanding officer of Naval Hospital, Canacao, in the Philippines on the eve of Pearl Harbor. All of us who knew and admired Dr. Pruett will miss his friendship.

Desert Survival Correction

In *Navy Medicine* November-December 1990 on page 19, the last sentence under Mirages should read: If you can get 10 feet or more above the superheated air on the desert floor this effect can be overcome.

Navy Medicine Korea, 1951



Photos from BUMED Archives





Clockwise, from top: A wounded marine receives blood plasma before being loaded aboard an evacuation helicopter; Navy nurse attends a patient aboard hospital ship *USS Consolation*; troops overcome Korean terrain with a jury-rigged trolley; and a makeshift ambulance arrives at a battalion aid station.



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